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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,898	02/22/2002	Toshio Suzuki	03500.016198	7391

5514 7590 10/02/2003

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NEW YORK, NY 10112

EXAMINER
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ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/079,898	SUZUKI, TOSHIO	
	Examiner	Art Unit	
	Anita K Alanko	1765	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>filed 11/8/02</u> | 6) <input type="checkbox"/> Other: _____                                    |

***Drawings***

Figures 10A-10I should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "low" in claim 1, line 6 is a relative term that renders the metes and bounds of the claim unclear.

In claim 1, line 12, the term "said solid film" lacks proper antecedent basis. It appears that it should cite - - said solid layer- - .

Claims 2-12 do not cure the indefiniteness of their base layer, and therefore they are also rejected.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

*Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozaki et al (US 6,331,259 B1) in view of admitted prior art.*

Ozaki discloses a method and an ink jet printhead formed by the method comprising:  
forming, on a substrate 1, a solid layer 3 composed of PSG and having a pattern for constituting a liquid flow path (Fig.2D);

forming an inorganic film 4 (silicon nitride, col.7, lines 60-65) by a low temperature film formation (CVD) so as to cover said solid layer;

forming a layer of a head forming material so as to cover said inorganic film with a layer that has ink repellent property (col.8, lines 42-52);

removing a part 14 of said inorganic film for forming a discharge port (Fig. 2G); and  
removing said solid layer thereby forming a liquid flow path communicating with the discharge port (Fig.2H).

Ozaki does not disclose that the solid layer is composed of soluble resin. Admitted prior art teaches that a soluble resin 106 (Fig.10C) is a useful material for pattern liquid flow paths in printheads. It would have been obvious to one with ordinary skill in the art to use a soluble resin in the method of Ozaki because admitted prior art teaches that it is a useful material for patterning liquid flow paths in printheads, and the same final structure results because it acts as a sacrificial layer.

As to claims 5-6, Ozaki discloses that the layer of head forming material can comprise an ink-repellent settable resin (col.8, lines 42-46) or an inorganic material (doped SiN, col.8, lines 46-50).

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As to claims 7-9 and 11, Ozaki discloses a side shooter type head in which said discharge port is provided toward above said substrate (Fig.2H). However, admitted prior art teaches that edge shooter type in which discharge ports are provided on an end face of the substrate with removing by cutting (Fig.10A-10I) is a useful configuration for a printhead. It would have been obvious to one with ordinary skill in the art to use either an edge shooter type or a side shooter type in the method of Ozaki because admitted prior art teaches that the edge shooter type is a useful configuration for printheads.

As to claim 10, Ozaki discloses to use dry etching to remove the inorganic film (col.8, lines 17-21).

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art shows methods of manufacturing printheads.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 703-305-7708. The examiner can normally be reached on Monday, Tuesday and Friday, 8:00 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 703-305-2667. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Art Unit: 1765

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*Anita K. Alanko*

Anita K Alanko  
Primary Examiner  
Art Unit 1765